

Digital Tone-Based Flight Termination Receiver/Decoder Model HFTR60-3



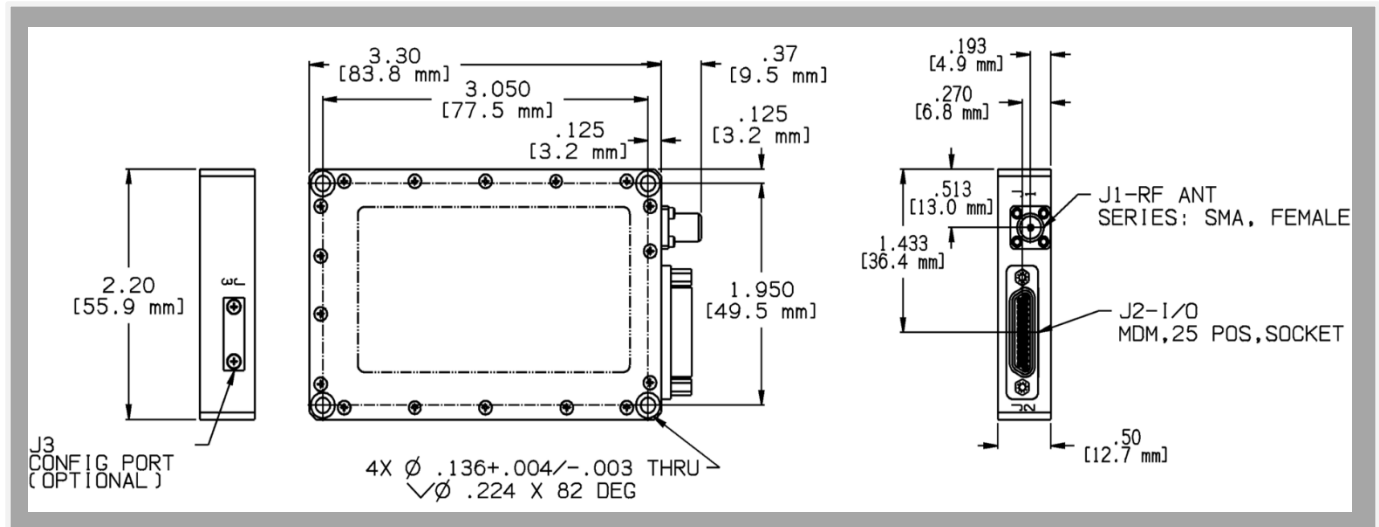
Supplying high performance flight instrumentation, RF/microwave assemblies, power amplifiers, IFF and data acquisition systems for severe environments.

The CAES HFTR60-3 is the next generation programmable, digital Flight Termination Receiver (FTR) that uses advanced Digital Signal Processing (DSP) techniques to process standard IRIG tones. The HFTR60-3 is functionally compliant and qualified to RCC319-14 and is a form, fit and function replacement for legacy Flight Termination System (FTS) configurations using tone-based flight termination receivers.

The HFTR60-3 is a compact unit, capable of handling the harshest environments and is qualified to meet military operational environments and EMI. The HFTR60-3 employs the latest technologies and manufacturing processes to provide a high performance, highly reliable, stable, and long-life product.



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Due to U.S. Export Control Reform this product has transitioned from ITAR to Department of Commerce Export Administration Regulations (EAR) making it ITAR-free.

PRODUCT BRIEF

RELEASE DATE 12/31/2021

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FEATURES:

- RCC 319-14 Functionally Compliant
- Programmable frequency 420-450 MHz
- Programmable 3 or 4 tone channels
- Capable of storing up to 32 factory or field programmed configurations
- All solid-state design
- High sensitivity receiver
- Small, less than 3.7 cubic inches
- Lightweight, less than 5 ounces
- No RF/IF tuning elements
- Reverse polarity power protection
- Telemetry output protection
- Designed for extreme environments
- Operating temperature to -54° and +85°

OPTIONS:

- 406 to 420 MHz band
- No failsafe, Standard failsafe, Commanded failsafe
- Common returns: Signal strength and DC returns
- All returns connected to chassis
- Nominal IF Bandwidth Audio output: 7 kHz to 32 kHz, 155mV to 310mV RMS
- Extended audio bandwidth available to 45 kHz
- J2 Pin 11 Low Voltage Telemetry Output (LVTM)
- Supports constant current terminate output

ELECTRICAL:

- Frequency Range: 420 to 450 MHz (factory preset to customer specified frequency)
- Impedance: 50 ohms nominal
- VSWR: Less than 2:1
- Reverse Polarity Protection: Built-in
- DC Input Voltage: +22 to +36 Vdc, ±45Vdc over voltage protected
- Unit Power: 4.5 W max.
- Low Voltage Sense: isolated input
- Telemetry Outputs: signal strength, 3 or 4 tone monitors failsafe, ±45 Vdc over voltage protected
- Command Outputs: 4 solid-state outputs
- Command Outputs, Voltage Drop Under Load: Terminate, ARM, MONITOR, OPTIONAL: 2 Vdc maximum at 1 amp 3.5Vdc maximum at 2 amps
- TERMINATE: 4Vdc maximum at 7.5 amps, 100 msec
- Output Leakage Current: 50 microamps maximum
- Isolated Returns: Signal strength output isolated from DC return and

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chassis ground

- RFI/EMI: Meets MIL-STD-461F, tests; CE102, CE106, CS101, CS103, CS104, CS105, CS114, CS115, CS116, RE102 and RS103

PHYSICAL:

- Size: 3.3 X 2.2 X .5 inches (8.4 X 5.6 X 1.3 cm), less connectors
- Weight: 5 ounces maximum
- Antenna Connector (J1): RF input SMA - Female
- Power and Signal Connector (J2): 25-pin micro-D socket M83513/04-D05N

ENVIRONMENTAL:

- Random Vibration (ATP): 0.04 g²/Hz (6.1 grms)
 - Random Vibration (Qual): 29.7 grms
 - Temperature, Operating (ATP): 40°C TO +71°C standard
 - Temperature, Operating (Qual): 54°C TO +85°C
 - Temperature, Storage (Qual): 62°C TO +95°C
 - Shock (Qual): 1300g SRS
 - Altitude (Qual): 15,000 ft
 - Humidity (Qual): 95%
 - Acceleration (Qual): Up to 125 g'S
- *As of publishing date

RECEIVER

- Design: Double conversion super-heterodyne
- Sensitivity: -107 to -116 dBm
- Frequency Band: 406 to 450 MHz
- Frequency Tuning: programmable, 100 kHz steps
- Tuning Accuracy: 0.005%
- Dynamic Range: -107 dBm to +13 dBm
- Operating Bandwidth: ± 45 kHz minimum
- IF Bandwidth: 3dB @ ± 90 kHz minimum
- Selectivity: 60 dB @ ± 180 kHz maximum
- Image Rejection: Greater than 60 dB
- Capture Ratio: Greater than 0.8
- AM Rejection: 100% at 100µV input
- Frequency Deviation: ± 30 kHz per tone, nominal
- Signal Strength Monitor Output: No RF 0.5Vdc ± 0.25Vdc monotonically increases to 4.5Vdc minimum at -60 to -50dBm input. Maximum voltage 4.75Vdc ± 0.25Vdc.
- Power-On Self Test (POST)
- Indication

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DECODER:

- Command Response Time: 4 to 25 msec
- Number of Tone Decoders: 3 or 4, programmable IRIG tones 1-13
- Simultaneous Usable Tones: 3
- Tone Monitor Outputs (into 10k Ohm): Activated 4.5Vdc \pm 0.5Vdc, Unactivated 0.0Vdc \pm 0.5 Vdc
- Tone Decoder Bandwidth: \pm 1% minimum at 2dB, \pm 4% max at 20 dB
- Adjacent Tone Rejection: Rejects simultaneous adjacent tones greater than +/- 50 kHz deviation
- Decoder Threshold Deviation: +/- 9-18 kHz
- Power Dropout Recovery: 50 msec power dropout, Command, FS Enable restore
- Failsafe: Loss of Tone A (programmable, 1 to 120 sec, at 0.1s resolution)
- Low Voltage Failsafe Sense: programmable, > 22 Vdc in 0.5 V steps +/- 0.5Vdc
- Failsafe Event: Arm/Terminate Latch "On" Power Down to Reset
- Failsafe: RCC319-14, Dual receiver cross strap operation compliant

PRODUCT NUMBERS

- P/N 570014-xxx (see options)

* Product in development, targeted specification